**Amendments to the Claims**

This listing of claims will replace all prior versions, and listings of claims in the application:

**Listing of Claims:**

1-3. (canceled)

4. (Currently amended) The method according to ~~claim 1~~ claim 23, wherein the ~~senescent cell~~ patient is ~~derived from~~ human ~~cell~~.

5. (canceled)

6. (Currently amended) The method according to claim 23, wherein the adenylyl cyclase ~~with increased expression in senescent cell~~ is adenylyl cyclase II, adenylyl cyclase IV or adenylyl cyclase VI.

7. (canceled)

8. (Currently amended) The method according to claim 23, wherein the protein kinase A ~~with increased expression in senescent cell~~ is Cα , RIα or RIβ subunit thereof.

9. (Currently amended) [[A]] The method according to claim 23, wherein said [[for]] modulating of cellular senescence ~~comprising~~ comprises treating a senescent cell in said patient ~~with the effective amount of an inhibitor of adenylyl cyclase, an inhibitor of protein kinase A, an inhibitor of protein kinase C or an activator of Gi protein~~.

10. (Currently amended) The method according to claim 9, wherein the inhibitor of adenylyl cyclase is selected from ~~the group consisting of~~ 2',5'-dideoxyadenosine, cis-N-(2-phenylcyclopentyl)azacyclotridec-1-en-2-amine and 9-(tetrahydro-2'-furyl)adenine.

11. (Currently amended) The method according to claim 9, wherein the inhibitor of protein kinase A is selected from ~~the group consisting of~~ adenosine 3',5'-cyclic phosphorothiolate, 8-bromo-adenosine 3',5'-cyclic monophosphorothioate, 4-cyano-3-methylisoquinoline, 1-(5-isoquinolinesulfonyl)-2-methylpiperazine, N-[2-(methylamino)ethyl]-5-isoquinolinesulfonamide, isoquinolinesulfonamide, N-(2-aminoethyl)-5-isoquinolinesulfonamide, N-[2-((p-bromocinnamy)amino)ethy l]-5-isoquinolinesulfonamide and (5-isoquinolinesul fonyl)piperazine.

12. (Currently amended) The method according to claim 9, wherein the inhibitor of protein kinase C is selected from ~~the group consisting of~~ 2-[1-(3-dimethylaminopropyl)-1H-indol-3-yl]-3-(1H-indol-3-yl)-maleimide, 2-[1-[2-(1-methylpyrrolidino) ethyl]-1H-indol-3-yl]-3-(1H-indol-3-yl)maleimide, 2-[1-(3-aminopropyl)-1H-indol-3-yl]-3-(1H-indol-3-yl)maleimide, 2,3-bis(1H-indol-3-yl)maleimide and 2,3-bis(1H-indol-3-yl)-N-methylmaleimide.

13. (Currently amended) The method according to claim 9, wherein the activator of Gi protein is selected from ~~the group consisting of~~ $N_6$-cyclopentyladenosine, 5-chloro-$N_6$-adenosine, 2-[p-(2-carboxyethyl) phenethylamino]-5'-N-ethylcarboxamido adenosine, oxymetazoline, prazosin, 2-[2-[4-(2-methoxyphenyl)-1-piperazinyl]ethyl]-4,4-dimethyl-(2H,4H)-isoquinoline-1,3-dione, cannibinol, MGSA, 3-aminopropylphosphinic acid, galanin, quisqualate,

sumatriptan, melatonin, (5,7,8)-(-)-N-methyl-[7-(1-pyrrolidinyl)-1-oxaspiro(4,5)dec-8-yl]benzeneacetamide and pertussis toxin.

14. (Currently amended) The method according to claim 9, wherein the patient is human and said senescent cell is ~~derived from~~ a human cell.

15. (Currently amended) The method according to ~~claim 12~~ claim 14, wherein the human cell is a fibroblast.

16-22. (canceled)

23. (Currently amended) A method for modulating cellular senescence in a patient in need thereof, said method comprising administering to the patient [[the]] an effective amount of

a) an inhibitor of adenylyl cyclase to inhibit said cyclase,

b) an inhibitor of protein kinase A to inhibit said kinase A,

c) an inhibitor of protein kinase C to inhibit said kinase C, or

d) an activator of Gi protein to activate said Gi protein,

wherein said effective amount modulates cellular senescence in the patient.

24. (Currently amended) The method according to claim 23, wherein the inhibitor of adenylyl cyclase is selected from ~~the group consisting of~~ 2',5'-dideoxyadenosine, cis-N-(2-phenylcyclopentyl)azacyclotridec-1-en-2-amine and 9-(tetrahydro-2'-furyl)adenine.

25. (Currently amended) The method according to claim 23, wherein the inhibitor of protein kinase A is selected from ~~the group consisting of~~ adenosine 3',5'-cyclic

phosphorothiolate, 8-bromo-adenosine 3',5'-cyclic monophosphorothioate, 4-cyano-3-methylisoquinoline, 1-(5-isoquinolinesulfonyl)-2-methylpiperazine, N-[2-(methylamino)ethyl]-5-isoquinolinesulfonamide, isoquinolinesulfonamide, N-(2-aminoethyl)-5-isoquinolinesulfonamide, N-[2-((p-bromocinnamy)amino)ethyl]-5-isoquinolinesulfonamide and (5-isoquinolinesul fonyl)piperazine.

26. (Currently amended) The method according to claim 23, wherein the inhibitor of protein kinase C is selected from ~~the group consisting of~~ 2-[1-(3-dimethylaminopropyl)-1H-indol-3-yl]-3-(1H-indol-3-yl)-maleimide, 2-[1-[2-(1-methylpyrrolidino) ethyl]-1H-indol-3-yl]-3-(1H-indol-3-yl)maleimide, 2-[1-(3-aminopropyl)-1H-indol-3-yl]-3-(1H-indol-3-yl)maleimide, 2,3-bis(1H-indol-3-yl)maleimide and 2,3-bis(1H-indol-3-yl)-N-methylmaleimide.

27. (Currently amended) The method according to claim 23, wherein the activator of Gi protein is selected from ~~the group consisting of~~ $N_6$-cyclopentyladenosine, 5-chloro-$N_6$-adenosine, 2-[p-(2-carboxyethyl) phenethylamino]-5'-N-ethylcarboxamido adenosine, oxymetazoline, prazosin, 2-[2-[4-(2-methoxyphenyl)-1-piperazinyl]ethyl]-4,4-dimethyl-(2H,4H)-isoquinoline-1,3-dione, cannibinol, MGSA, 3-aminopropylphosphinic acid, galanin, quisqualate, sumatriptan, melatonin, (5,7,8)-(-)-N-methyl-[7-(1-pyrrolidinyl)-1-oxaspiro(4,5)dec-8-yl]benzeneacetamide and pertussis toxin.